METHOD AND APPARATUS FOR UTILITY-BASED DYNAMIC RESOURCE ALLOCATION IN A DISTRIBUTED COMPUTING SYSTEM

ABSTRACT

[0039] In one embodiment, the present invention is a method for allocation of finite computational resources amongst multiple entities, wherein the method is structured to optimize the business value of an enterprise providing computational services. One embodiment of the inventive method involves establishing, for each entity, a service level utility indicative of how much business value is obtained for a given level of computational system performance. The service-level utility for each entity is transformed into a corresponding resource-level utility indicative of how much business value may be obtained for a given set or amount of resources allocated to the entity. The resource-level utilities for each entity are aggregated, and new resource allocations are determined and executed based upon the resource-level utility information. The invention is thereby capable of making rapid allocation decisions, according to time-varying need or value of the resources by each of the entities.